

Search strategy
08/915,659

> d 16 5,22

✓ 5,736,357, Apr. 7, 1998, Cathepsin O protease; Dieter Bromme, et al.,
435/69.1, 252.3, 254.11, 320.1, 325; 536/23.5 [IMAGE AVAILABLE]

✓ 5,443,967, Aug. 22, 1995, DNA encoding the cancer associated SCM
recognition factor; Boris Cersek, et al., 435/69.3, 172.3, 320.1;
530/300, 324, 325, 326, 327, 328, 329; 536/23.1, 23.2, 23.5, 24.3, 24.31
[IMAGE AVAILABLE]

=> d his

(FILE 'USPAT' ENTERED AT 13:24:35 ON 21 JUL 1998)
E O'BRIEN, TIM/IN
E O BRIEN, TIM/IN
L1 6 S E6
E UNDERWOOD, L/IN
L2 1 S E11
L3 598 S OVARIAN, AB, CLM
L4 1624 S OVARIAN(4A)(CANCER? OR CARCINOMA?)
L5 1896 S SERINE(4N)(PROTEINASE? OR PROTEASE?)
L6 35 S L4 AND L5
L7 0 S NEUROPSIN?
L8 22811 S TUMOR?
L9 516 S L5 AND L8
L10 8992 S OVARIAN
L11 267 S L10 AND L5
L12 7 S L10(P)L5

t s4/7/2,3,5,8

4/7/2 (Item 2 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)
(c) 1998 BIOSIS. All rts. reserv.

14198282 BIOSIS Number: 01198282
Cloning and expression of TADG-15, a novel serine protease
expressed in ovarian cancer
Tanimoto H; Underwood L J; Clarke Y; O'Brien T J
Univ. Arkansas Med. Sci., Little Rock, AR 72205, USA
Proceedings of the American Association for Cancer Research Annual
Meeting 39 (O). 1998. 648.
Full Journal Title: 89th Annual Meeting of the American Association for
Cancer Research, New Orleans, Louisiana, USA, March 28-April 1, 1998.
Proceedings of the American Association for Cancer Research Annual Meeting
ISSN: 0197-016X
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 050 Iss. 005 Ref. 080188

4/7/3 (Item 3 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)
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14195898 BIOSIS Number: 01195898
Identification of a novel serine protease overexpressed in
ovarian carcinoma
Underwood L J; Clarke J; Tanimoto H; Wang Y; O'Brien T J
Univ. Arkansas Med. Sci., Little Rock, AR 72205, USA
Proceedings of the American Association for Cancer Research Annual
Meeting 39 (O). 1998. 297.
Full Journal Title: 89th Annual Meeting of the American Association for
Cancer Research, New Orleans, Louisiana, USA, March 28-April 1, 1998.
Proceedings of the American Association for Cancer Research Annual Meeting
ISSN: 0197-016X
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 050 Iss. 005 Ref. 077804

4/7/5 (Item 5 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)
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13660628 BIOSIS Number: 99660628
Hepsin, a cell surface serine protease identified in hepatoma
cells, is overexpressed in ovarian cancer
Tanimoto H; Yan Y; Clarke J; Korourian S; Shigemasa K; Parmley T H;
Parham G P; O'Brien T J
Dep. Obstet./Gynecol., Univ. Arkansas Med. Sci., 4301 West Markham Slot
718 Little Rock, AR 72205-7199, USA
Cancer Research 57 (14). 1997. 2884-2887.
Full Journal Title: Cancer Research
ISSN: 0008-5472
Language: ENGLISH
Print Number: Biological Abstracts Vol. 104 Iss. 005 Ref. 069027
Extracellular proteases mediate the digestion of neighboring
extracellular matrix components in initial tumor growth, allow shedding or
desquamation of tumor cells into the surrounding environment, provide the
basis for invasion of basement membranes in target metastatic organs, and
are required for release and activation of many growth and angiogenic
factors. We identified overexpression of the serine protease
hepsin gene in ovarian carcinomas and investigated the
expression of this gene in 44 ovarian tumors (12 low malignant potential

RC 26, A1 C2

tumors and 32 carcinomas) and 10 normal ovaries. Quantitative PCR was used to determine the relative expression of hepsin compared to that of beta-tubulin. The mRNA expression levels of hepsin were significantly elevated in 7 of 12 low malignant potential tumors and in 27 of 32 carcinomas. On Northern blot analysis, the hepsin transcript was abundant in carcinoma but was almost never expressed in normal adult tissue, including normal ovary. Our results suggest that hepsin is frequently overexpressed in ovarian tumors and therefore may be a candidate protease in the invasive process and growth capacity of ovarian tumor cells.

4/7/8 (Item 8 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)
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13248982 BIOSIS Number: 99248982
A novel protease homolog differentially expressed in breast and ovarian cancer

Anisowicz A; Sotiropoulou G; Stenman G; Mok S C; Sager R
Dana-Farber Cancer Inst. Div. Cancer Genet., 44 Binney St., Boston, MA
02115, USA

Molecular Medicine (Cambridge) 2 (5). 1996. 624-636. QH506,M654
Full Journal Title: Molecular Medicine (Cambridge)
ISSN: 1076-1551

Language: ENGLISH
Print Number: Biological Abstracts Vol. 102 Iss. 011 Ref. 164612
Background: Using differential display (DD), we discovered a new member of the serine protease family of protein-cleaving enzymes, named protease M. The gene is most closely related by sequence to the kallikreins, to prostate-specific antigen (PSA), and to trypsin. The diagnostic use of PSA in prostate cancer suggested that a related molecule might be a predictor for breast or ovarian cancer. This, in turn, led to studies designed to characterize the protein and to screen for its expression in cancer. Materials and Methods: The isolation of protease M by DD, the cloning and sequencing of the cDNA, and the comparison of the predicted protein structure with related proteins are described, as are methods to produce recombinant proteins and polyclonal antibody preparations. Protease M expression was examined in mammary, prostate, and ovarian cancer, as well as normal, cells and tissues. Stable transfectants expressing the protease M gene were produced in mammary carcinoma cells. Results: Protease M was localized by fluorescent in situ hybridization analysis to chromosome 19q13.3, in a region to which other kallikreins and PSA also map. The gene is expressed in the primary mammary carcinoma lines tested but not in the corresponding cell lines of metastatic origin. It is strongly expressed in ovarian cancer tissues and cell lines. The enzyme activity could not be established, because of difficulties in producing sufficient recombinant protein, a common problem with proteases. Transfectants were selected that overexpress the mRNA, but the protein levels remained very low. Conclusions: Protease M expression (mRNA) may be a useful marker in the detection of primary mammary carcinomas, as well as primary ovarian cancers. Other medical applications are also likely, based on sequence relatedness to trypsin and PSA.

? t s8/7/28,38,39,78,100

8/7/28 (Item 28 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)
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13090063 BIOSIS Number: 99090063

Identification of a novel serine protease-like gene, the expression of which is down-regulated during breast cancer progression
Liu X-L; Wazer D E; Watanabe K; Band V
Dep. Biochem., Tufts Univ. Sch. Med., 750 Washington St., Boston, MA
02111, USA

Cancer Research 56 (14). 1996. 3371-3379.

Full Journal Title: Cancer Research

ISSN: 0008-5472

Language: ENGLISH

In an effort to isolate genes with down-regulated expression at the mRNA level during oncogenic transformation of human mammary epithelial cells (MECs), we performed subtractive hybridization between normal MEC strain 76N and its radiation-transformed tumorigenic derivative 76R-30. Here, we report the isolation of cDNA clones corresponding to a 1.4-kb mRNA species that is abundantly expressed in 76N cells but is drastically reduced in 76R-30 cells. Based on its selective expression in MECs compared with fibroblasts, the corresponding gene is designated NES1 (normal epithelial cell-specific 1). Sequence analysis of the full-length NES1 cDNA clones revealed it to be a novel gene with a predicted polypeptide of 30.14 kilodaltons; *in vitro* transcription and translation confirmed this prediction. Database searches revealed a 50-63% similarity and 34-42% identity with several families of serine proteases, in particular the trypsin-like proteases, members of the glandular kallikrein family (including prostate-specific antigen, nerve growth factor gamma, and epidermal growth factor-binding protein) and the activators for the kringle family proteins (including the human tissue plasminogen activator and human hepatocyte growth factor activator). Importantly, all of the residues known to be crucial for substrate binding, specificity, and catalysis by the serine proteases are conserved in the predicted NES1 protein, suggesting that it may be a protease. An antipeptide antibody directed against a unique region of the NES1 protein (amino acids 120-137) detected a specific 30-kilodalton polypeptide almost exclusively in the supernatant of the mRNA-positive MECs, suggesting that NES1 is a secreted protein. The 1.4-kb NES1 mRNA was expressed in several organs (thymus, prostate, testis, ovary, small intestine, colon, heart, lung, and pancreas) with highest levels in the ovary; a 1.1-kb transcript was found in the pancreas. Although expression of the NES1 mRNA was observed in all normal and immortalized nontumorigenic MECs, the majority of human breast cancer cell lines showed a drastic reduction or a complete lack of its expression. The structural similarity of NES1 to polypeptides known to regulate growth factor activity and a negative correlation of NES1 expression with breast oncogenesis suggest a direct or indirect role for this novel protease-like gene product in the suppression of tumorigenesis.

8/7/38 (Item 38 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)
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11720980 BIOSIS Number: 98320980
Occurrence of a latent serine protease in the follicular fluid of porcine ovary
Ohnishi J; Takahashi T
Div. Biol. Sci., Graduate Sch. Sci., Hokkaido Univ., Sapporo 060, Japan
Zoological Science (Tokyo) 12 (1). 1995. 87-90.
Full Journal Title: Zoological Science (Tokyo)
ISSN: 0289-0003
Language: ENGLISH
Print Number: Biological Abstracts Vol. 100 Iss. 002 Ref. 028704
Porcine ovary follicular fluid contains a latent form of a protease which is activatable with trypsin. The active enzyme hydrolyzed peptide 4-methylcoumaryl-7-amide (MCA) substrates with a preference for the Arg-MCA bond. The enzyme was strongly inhibited by diisopropylfluorophosphate, aprotinin, leupeptin and antipain, but not by soybean trypsin inhibitor. The apparent molecular weight of the enzyme was approximately 630,000 as estimated by gel filtration. No significant difference in molecular size was seen between the inactive precursor and trypsin-activated enzyme. The results suggest that the present enzyme is a novel type of serine protease.

8/7/39 (Item 39 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)
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11598471 BIOSIS Number: 98198471
Purification, characterization, and localization of follipsin, a novel serine proteinase from the fluid of porcine ovarian follicles

Hamabata T; Okimura H; Takahashi T
Dev. Biol. Sci., Graduate Sch. Sci., Hokkaido Univ., Sapporo, Japan
Zoological Science (Tokyo) 11 (SUPPL.). 1994. 12.
Full Journal Title: Sixty-fifth Annual Meeting of the Zoological Society
of Japan, Nagoya, Japan, October 5-8, 1994. Zoological Science (Tokyo)
ISSN: 0289-0003
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 047 Iss. 005 Ref. 072134

8/7/78 (Item 78 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)
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5433120 BIOSIS Number: 82077923

A NOVEL DIPEPTIDYL PEPTIDASE II FROM THE PORCINE OVARY PURIFICATION
AND CHARACTERIZATION OF A LYSOSOMAL SERINE PROTEASE SHOWING
ENHANCED SPECIFICITY FOR PROLYL BONDS

EISENHAUER D A; McDONALD J K

DEP. BIOCHEM., MED. UNIV. S.C., CHARLESTON, S.C. 29425.

J BIOL CHEM 261 (19). 1986. 8859-8865. CODEN: JBCHA

Full Journal Title: Journal of Biological Chemistry

Language: ENGLISH

A variant form of dipeptidyl peptidase II (DPP II), initially reported under the name of "DPP V" (Eisenhauer, D. A., and McDonald, J. K. (1982) Fed. Proc. 41, 507), was detected in aqueous extracts of porcine ovaries on the basis of a markedly enhanced action on prolyl bonds. This porcine form of DPP III, which was most sensitively assayed on Phe-Pro-2-naphthylamide (Phe-Pro-NNap), was purified 1400-fold to a specific activity of 28 .mu.mol/min/mg of protein (pH 6.0, 37.degree. C) from an aqueous extract of hog ovaries taken during pregnancy, when ovarian levels of DPP II are some 3- to 8-fold higher. Purification involved ammonium sulfate fractionation, molecular exclusion chromatography, chromatofocusing, affinity chromatography on concanavalin A-Sepharose 4B, and high performance ion exchange chromatography. The purified enzyme, which was apparently electrophoretically homogeneous at pH 3, 7, and 8.8 (pI = 5.0), was shown to be an Mr = 110,000 glycoprotein containing about 2% carbohydrate (primarily mannose) and < 1% sialic acid, and to consist of two noncovalently linked Mr = 54,000 subunits. A serine catalytic mechanism was supported by inhibitor studies and by common mobilities seen during electrophoresis for (histochemically detected) Phe-Pro-arylamidase activity and the [14C]disopropyl fluorophosphate-labeled enzyme. In the standard fluorometric assay at 37.degree. C, Phe-Pro-NNap (0.2 mM) was hydrolyzed optimally at pH 6.0 (Km = 45 .mu.M; kcat = 54 s-1). In comparison to the rate seen on Lys-Ala-NNap, the usual DPP II assay substrate, rates seen on Phe-Pro-, Lys-Pro-, and Arg-Pro-NNap was about 8-, 4-, and 2-fold higher, respectively. No action occurred on N-blocked derivatives or on Pro-NNap. Action on oligopeptides appeared to be limited to tripeptides, in particular those containing proline or alanine in the P1 position, i.e. Phe-Pro-Ala(100%), Lys-Ala-Ala (35%), Ala-Ala-Ala (33%), and Gly-Pro-Ala (26%). Only a trace of activity was seen on Phe-Pro-Ala-Ala, and none of Z-Phe-Pro-Ala or Ala-Ala-Ala-OMe. Evidence for the lysosomal localization of DPP II included sedimentability and latency and its distribution, coincident with acid phosphatase, in two distinct isopycnic regions following equilibrium density centrifugation. Lysosomal heterogeneity was suggested by this dual isopycnic banding. The lysosomal distribution of DPP II and its selective action on Gly-Pro-X tripeptides served to implicate this protease in the late stages of collagen degradation, especially in view of the recent identification of a lysosomal tripeptide (Gly-Pro-X) releasing enzyme in ovarian lysosomes.

8/7/100 (Item 20 from file: 154)

DIALOG(R)File 154:MEDLINE(R)

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05428290 89076541

Characterization of a tumor-associated serine protease.

Stenman UH; Koivunen E; Vuento M

Department I of Obstetrics and Gynecology, Helsinki University Central Hospital.

Languages: ENGLISH

Document type: JOURNAL ARTICLE

We have earlier identified and characterized a tumor-associated trypsin inhibitor (TATI) in the urine of patients with gynecological cancer. Elevated levels of TATI occur in urine and serum of cancer patients (Stenman, U. H., Huhtala, M. L., Koistinen, R. & Seppala, M. (1982) *Int. J. Cancer* 30, 53-57). To explain the elevation of TATI in cancer, we have postulated the existence of a tumor-associated protease reacting with TATI. Such a protease, tentatively called protease T, was found in cyst fluid from mucinous ovarian tumors. The protease occurs in complex with TATI, and its protease activity can be measured only after dissociation of the complex. This is achieved by reversed phase chromatography at low pH and elution with an isopropyl alcohol gradient. Protease T is inhibited by phenylmethanesulphonyl fluoride indicating that it is a serine protease. Its optimum activity at pH 9.1 and molecular mass of 24 kDa in gel chromatography are similar to those of trypsin but the substrate specificity is not identical and its isoelectric point (pI) is about 4.0, which is lower than the corresponding values of both cationic (pI 9) and anionic trypsin (pI 5). Protease T could be associated with the elevation of TATI seen in certain tumor patients.

? t s11/7/2,4,13

11/7/2 (Item 2 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)
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14255444 BIOSIS Number: 01255444

Characterization of recombinant and brain neuropsin, a plasticity-related serine protease

Shimizu C; Yoshida S; Shibata M; Kato K; Momota Y; Matsumoto K; Shiosaka T; Midorikawa R; Kamachi T; Kawabe A; Shiosaka S
Div. Structural Cell Biol., Nara Inst. Sci. Technol., 8916-5 Takayama, Ikoma, Nara 630-0101, Japan

Journal of Biological Chemistry 273 (18). 1998. 11189-11196.

Full Journal Title: Journal of Biological Chemistry

ISSN: 0021-9258

Language: ENGLISH

Print Number: Biological Abstracts Vol. 105 Iss. 012 Ref. 167792

Activity-dependent changes in neuropsin gene expression in the hippocampus implies an involvement of neuropsin in neural plasticity. Since the deduced amino acid sequence of the gene contained the complete triplet (His-Asp-Ser) of the serine protease domain, the protein was postulated to have proteolytic activity. Recombinant full-length neuropsin produced in the baculovirus/insect cell system was enzymatically inactive but was readily converted to active enzyme by endoprotease processing. The activational processing of prototype neuropsin involved the specific cleavage of the Lys-32-Ile-33 bond near its N terminus. Native neuropsin that was purified with a purity of 1,100-fold from mouse brain had enzymatic characteristics identical to those of active-type recombinant neuropsin. Both brain and recombinant neuropsin had amidolytic activities cleaving Arg-X and Lys-X bonds in the synthetic chromogenic substrates, and the highest specific activity was found against Boc-Val-Pro-Arg-4-methylcoumaryl-7-amide. The active-type recombinant neuropsin effectively cleaved fibronectin, an extracellular matrix protein. Taken together, these results indicate that this protease, which is enzymatically novel, has significant limbic effects by changing the extracellular matrix environment.

11/7/4 (Item 4 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)
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14177529 BIOSIS Number: 01177529

Expression of neuropsin mRNA in the mouse embryo and the pregnant uterus

Chen Z-L; Momota Y; Kato K; Taniguchi M; Inoue N; Shiosaka S; Yoshida S
Dep. Structural Cell Biol., NAIST, 8916-5, Takayama, Nara 630-01,

Japan

Journal of Histochemistry and Cytochemistry 46 (3). 313-320.
Full Journal Title: Journal of Histochemistry and Cytochemistry
ISSN: 0022-1554

Language: ENGLISH

Print Number: Biological Abstracts Vol. 105 Iss. 009 Ref. 120241

Neuropsin is a novel serine protease whose mRNA is expressed in the mouse central nervous system. We examined the expression of neuropsin mRNA during embryonic development using Northern and in situ hybridization in non-neuronal tissues. The pregnant uterus showed strong expression of neuropsin mRNA, whereas the nonpregnant uterus did not express this mRNA. Expression was first detected in the primary decidua zone at 5.5 days post coitum and was maximized at 10 days post coitum, decreasing remarkably thereafter. During mouse organogenesis, neuropsin expression was observed in the developing heart, lung, thymus, pituitary, choroid plexus, and epithelial linings of the skin, oral cavity, tongue, esophagus, and forestomach. In adult mouse organs, neuropsin mRNA was expressed in epithelial tissues covered by keratinocytes with moderate density, whereas low expression was observed in lung, thymus, and spleen. Neuropsin mRNA expression in developing organs and adult keratinocytes suggests that neuropsin is associated with extracellular matrix modifications and cell migrations.

11/7/13 (Item 1 from file: 72)
DIALOG(R)File 72:EMBASE
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10764604 EMBASE No: 98206216

Sequence analysis and expression of human neuropsin cDNA and gene
Yoshida S.; Taniguchi M.; Hirata A.; Shiosaka S.
S. Yoshida, Division of Structural Cell Biology, Nara Inst. of Science

and Technology, 8916-5 Talayama Ikoma, Nara 630-1 Japan

Gene (Netherlands) , 1998, 213/1-2 (9-16)

CODEN: GENED ISSN: 0378-1119

PUBLICATION DATE: 19980615

PUBLISHER ITEM IDENTIFIER: S0378111998002327

DOCUMENT TYPE: Journal Article

LANGUAGES: ENGLISH SUMMARY LANGUAGES: ENGLISH

NUMBER OF REFERENCES: 27

Neuropsin is a serine protease which is thought to function in a variety of tissues including the brain and skin. This protease has been shown to have important roles in neural plasticity in mice. Here we have cloned a cDNA and analyzed the gene for human neuropsin by polymerase chain reaction-based strategies. The cDNA had 72% identity to mouse neuropsin. The deduced amino acid sequence showed 72% identity to mouse neuropsin. Key amino acid residues for the enzyme activity and all cysteine residues were conserved between human and mouse neuropsin. The gene for human neuropsin had six exons and five introns, and the gene organization is similar to trypsin-type serine proteases. The mRNA was expressed in primary cultures of keratinocytes.

? t s15/7/2,3

15/7/2 (Item 2 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)
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14198282 BIOSIS Number: 01198282

Cloning and expression of TADG-15, a novel serine protease expressed in ovarian cancer

Tanimoto H; Underwood L J; Clarke Y; O'Brien T J
Univ. Arkansas Med. Sci., Little Rock, AR 72205, USA
Proceedings of the American Association for Cancer Research Annual Meeting 39 (0). 1998. 648.

Full Journal Title: 89th Annual Meeting of the American Association for Cancer Research, New Orleans, Louisiana, USA, March 28-April 1, 1998.

Proceedings of the American Association for Cancer Research Annual Meeting

ISSN: 0197-016X

Language: ENGLISH

15/7/3 (Item 3 from file: 55)
 DIALOG(R)File 55:BIOSIS PREVIEWS(R)
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14195898 BIOSIS Number: 01195898

Identification of a novel serine protease overexpressed in ovarian carcinoma

Underwood L J; Clarke J; Tanimoto H; Wang Y; O'Brien T J
 Univ. Arkansas Med. Sci., Little Rock, AR 72205, USA

Proceedings of the American Association for Cancer Research Annual Meeting 39 (O). 1998. 297.

Full Journal Title: 89th Annual Meeting of the American Association for Cancer Research, New Orleans, Louisiana, USA, March 28-April 1, 1998.

Proceedings of the American Association for Cancer Research Annual Meeting

ISSN: 0197-016X

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Print Number: Biological Abstracts/RRM Vol. 050 Iss. 005 Ref. 077804

? ds

Set	Items	Description
S1	19209	SERINE(3N)(PROTEASE? OR PROTEINASE?)/TI,AB
S2	35817	OVAR?(5N)(CANCER? OR CARCINOM?)/TI,AB
S3	40	S1 AND S2
S4	18	RD (unique items)
S5	160718	OVAR?/TI,AB
S6	273	S1 AND S5
S7	233	S6 NOT S3
S8	105	RD (unique items)
S9	38	NEUROPSIN?
S10	29	S1 AND S9
S11	13	RD (unique items)
S12	201	E13,E31,E47
S13	195	S12 NOT (S3 OR S7)
S14	108	RD (unique items)
S15	4	E7,E21

? logoff hold

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 \$1.90 1 Type(s) in Format 7
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\$11.00 Estimated cost File72
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\$46.33 Estimated cost this search

\$46.33 Estimated total session cost 5.235 DialUnits

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